GEOGRAPHIC NEWS BULLETINS

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Photograph by Frank M. Warren

BABY LOONS CAN SWIM WHEN ONLY A FEW HOURS OLD

Isle Royale, proposed National Park, abounds in wild life, ranging from water fowl to moose and deer. Birds are varied and abundant, one observer having noted 86 different varieties in a summer month. Lake Superior offers no terrors for the 12-hour-old chick above, as it confidently swims up to take a crumb from the finger of a camper (see Bulletin No. 5).

HOW TEACHERS MAY OBTAIN THE BULLETINS

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Oporto Calls Attention to Third Largest Colonial Empire

FEW people realize that Portugal, the most ancient of the actual colonizing countries of Europe, still rules the third largest colonial empire. Only England and France possess more outlying domain.

To call attention to the resources and development of Portugal's 936,264 square miles of colonies in Africa and Asia (3½ times the area of Texas), a National Colonial Exhibition will be held in Oporto from June until September.

Although second in population and importance to Lisbon, the capital, Oporto is the best known city of Portugal to outsiders because it has given its name to port wine, one of the nation's chief exports. "Oporto" means "The Harbor" in Portuguese, but to its residents the city is simply "Porto."

City Built on Terraces of River Gorge

Oporto's rainbow-tinted, tile-roofed buildings terrace the slopes of a cliff on one side of the Douro River gorge. On the opposite side of the canyon is the town of Villa Nova de Gaia, where the port wine warehouses are located. Two magnificent bridges span the deep gorge.

There are three rival views. One is from the Dom Luiz bridge, looking up at the city on the heights and down on the busy water front by the chocolate-colored river, where quaint sailing craft and modern freighter meet. Another view is from the heights looking down on the granite gorge of the Douro. A third, from the Ribeira, or river road, has an unbelievably picturesque background of steep streets and tall, narrow houses with projecting gables and colored tile façades.

Built into the wall at the foot of the cliff are all manner of little booths patronized by longshoremen. The river road, which is always thronged, is the photographer's Mecca. Here are the bullock carts awaiting their loads; here the human carriers, men bearing burdens in boat-shaped baskets on their shoulders and women carrying everything imaginable on their heads, from a load of slate slabs, or a basket piled high with codfish, to a baby asleep in a cradle. The load is balanced on a little circular pad resembling a hard pincushion.

In Lisbon the oxcart has practically disappeared, but in Oporto it holds its own beside the automobile and the electric tram. The rural "singing carts," whose creaking is heard from afar, are unknown in the cities, however, where such sounds are unlawful, and the wheels are kept well oiled.

Picturesque Street Venders

On street corners women sell freshly-boiled shellfish, which are as popular as peanuts with us. The bright handkerchief worn over the woman's head in the Minho region is here replaced by a small, flat, circular, black velvet hat. Men, with baskets slung from the ends of poles, trot the streets, selling fruit and vegetables.

The homes of the middle class are one-floor apartments in tall downtown houses, but the wealthy citizens live in the suburbs, where their rather ornate homes are half hidden behind trees and flowering shrubs, the gardens enclosed within high stone walls.

In no other city save Rio de Janeiro is there such a satisfactory sight-seeing tram system. Twenty different lines come into the Praça da Liberdade. Each car bears a number and a little book with a map gives its route. You can ride to the river's mouth, up the coast to Leixões, where the ocean liners dock, and back to town through the residential section, or across the bridge over the Douro to Villa Nova de Gaia.

In the business district there are shopwindows filled with the attractive gold and silver filigree jewelry made in and near Oporto. The finest example of the silversmith's art is in a chapel of the old cathedral where the altar, tabernacle, reredos, and plate are entirely of silver,—a century's work of Portuguese artists.

Studying History in a Railroad Station

The inner walls of the railroad station are covered with historic paintings in blue and white glazed tiles. To follow these pictures in order is to know the outstanding events in the city's varied history, through Roman and Visigothic rule down to that red-letter day, in 1386, when King João I rode through the northern gate beside his fair English bride, Philippa of Lancaster, daughter of John of Gaunt.

A warm friendship, exemplified during the World War when Portugal joined the Allies,

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© Keystone View Company

"THE DE WITT CLINTON," ONE OF AMERICA'S FIRST TRAINS

This granddad of railroad transportation attained a speed of eight miles an hour during an airing along Riverside Drive, New York City, a few years ago. Contrast its primitive features and the stage-coach cars with the long, low, air-splitting lines of the newest gas-engined limiteds of the West, which can travel at speeds up to nearly two miles per minute (See Bulletin No. 3 and illustration).

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Tintagel, Where Legends of King Arthur Cling

MODERN critics may doubt that King Arthur and his Knights of the Table Round ever existed, but in Tintagel Arthurian legend is so real that a stone memorial Hall has been erected to the monarch who is supposed to have led the Christian kings of Britain against the Saxons of Kent during the 6th century.

Tintagel is a lonely, wind-swept village on the northwest coast of Cornwall whose chief claim to fame is the crumbling ruin of a gray old cliffside castle—one of the most remarkable monuments of antiquity in England.

Age of Castle Not Known

Whether or not King Arthur ever conducted his Table Round in the ancient stronghold that once crowned Tintagel Head, it is certain that it dates back to an unfathomable age. To Cornishmen it seems logical that a legend which has survived so many centuries must have a respectable origin. So stories of King Arthur, Merlin the Enchanter, and others are preserved, if not strictly believed, in Tintagel.

At Tintagel, as a matter of fact, what the visitor brings measures what he takes away. Come full of the Arthurian legend; come with Tennyson, with Geoffrey of Monmouth, with Mallory, and, in spite of the cynics, you will savor nothing but romance. Nowadays Tintagel castle is but a tracery of crumbling walls on a vast headland, at the foot of which the most superb seas of Cornwall crash and glitter. So far below is the water that even when the thinnest mist is in the air it is hardly possible to see the white foam of the breakers.

The castle is in two parts, separated by a deep ravine which, legend says, was once bridged. That it was impregnable before the days of artillery or aircraft is evident, defended as it is by steep cliffs and the sea. Roman, Saxon and Norman built here before the Cornish earls of recorded history.

Sheep Graze on Headland

To-day scores of sheep pasture fearlessly on the slippery slopes which plunge so swiftly to the sea. But an iron-studded door, as in days of yore, is still the only exit or entrance to the headland (see illustration, next page). Narrow, steep stone steps wind from it down the sheer face of a cliff to the high, narrow causeway linking the headland, which is almost an island, with the mainland.

The banqueting hall of the castle is open to the sky and the sun and stars look down in turn upon its turf-clad floor. Grasses grow where once Ygrayne, wife of the Duke of Cornwall, watched the siege of Castle Terrabil, on the mainland. When Terrabil fell, Uther Pendragon, its conqueror, slew the Duke and married his widow the same day. It was of this marriage that King Arthur was born, legend relates.

The village of Tintagel (also called Trevena) lies about a mile from the castle and sea, at the head of a long, winding ravine. It is not a port, although occasionally a boat comes in under the cliff to the steep, shingle beach with supplies. In addition to a few summer hotels the village possesses a 14th-century stone house with a sagging slate roof that gives it the appearance of a sway-backed horse.

Perhaps this old dwelling, now used as a post-office, was the residence of minor nobility, in that era when the hall was carpeted with rushes and one dipped with one's own hand in the dinner pot. The common room is unceiled to the rafters, and at one end a little balcony overhangs from which, no doubt, the ladies of the place kept displeased eyes upon their lords at wassail below. The walls are of graystone, the roof of slate, and in the little garden the bluest of cornflowers blow.

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has ever since existed between England and Portugal. Among the five sons born to João and Philippa was the Prince known as Henry the Navigator.

Christopher Columbus studied navigation in Oporto, on his way from Spanish Galicia, where his boyhood was spent, to Lisbon; but he was little known in those days and is not in the tile picture.

Strange Craft of the Lower Douro

The vines which produce the port wine grapes are not grown near Oporto, but about 60 miles up the Douro Valley. The sailing boats which bring the barrels of wine downstream to warehouses in Villa Nova de Gaia are flat-bottomed, to pass over shoals and around sandbars. They are most picturesque, with a spoon-shaped prow and one huge, square sail, bellying in the wind like those used on the earliest type of Phoenician craft (see illustration below). Bound upstream, long, heavy poles are employed, progress against the current being achieved by main strength.

Besides the wine carriers on the lower Douro are gondolalike boats with graceful lateen sails, an inheritance from the Moors; and narrow boats, high in prow and stern, like the ancient Grecian galleys. A book could be written on the strange craft to be seen in Portuguese waters.

Note: For photographs and additional data about Portugal and its far-flung colonial empire see: "Macao, Land of Sweet Sadness," *National Geographic Magazine*, September, 1932; "A Modern Saga of the Seas," December, 1931; "The Pathfinder of the East (Vasco da Gama)," and "An Altitudinal Journey Through Portugal," November, 1927; "Through the Deserts and Jungles of Africa by Motor," June, 1926; "Sindbads of Science," October, 1924; "Lisbon, The City of the Friendly Bay," November, 1922; "The Azores, Picturesque and Historic Halfway House of Transatlantic Aviators," June, 1919; "Impressions and Scenes of Mozambique" and "The Greatness of Little Portugal," October, 1910; also "Angola, the Last Foothold of Slavery," July, 1910.

Back copies of the *National Geographic Magazine* may be consulted in the bound volume of your school or public library.

Bulletin No. 1, May 7, 1934.

Photograph by A. W. Cutler

GRACEFUL WINE BOATS ON THE DOURO RIVER

The single white, square sail is typical of these sturdy craft, which bring thousands of gallons of "port" into Oporto for export to the world. These boats are distinctive for their raised frame platforms, from which the steersman operates the huge, clumsy rudder. The covered portion in the stern of the boat is used as living quarters.

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Railroads Gird to Meet Bus, Airplane and Automobile Competition

RAILROADS, out to recapture passenger traffic lost to buses, airplanes and private motor cars, are stressing speed, beauty and comfort in developing radically-different types of train equipment, geared to present-day needs.

Two Western lines have produced streamline trains, one of which recently attained 104 miles per hour on a test run. Hundreds of thousands of persons, including the President of the United States, displayed "boyish enthusiasm" in these lightly-built, motor-driven trains wherever they have been on exhibition (see illustration, next page).

Other railroads are trying to entice riders through electrification, automatic train-control, air-conditioning, and the use of motor coaches and "rail-mobiles." This summer American railroads are adding 700 air-cooled passenger and dining cars, doubling the number now in operation.

"Night-Club" Cars on Florida Trains

A New England railroad is building "turtle-back" day coaches with ovalized bottoms and all moldings eliminated to cut air resistance. "Night Club" cars, with hostesses and music, made their appearance on Florida trains last winter, and Pullmans composed entirely of individual bed rooms are now in general use. One Western road is using green window glass in club cars making desert runs, to cut down light glare and give a "cooling effect."

Indirect lighting, reclining seats in day coaches, "Colonial" dining cars, and club-car radios and telephones are also making their appearance.

The history of railroad transportation in the United States is a story of amazing development. At the outbreak of the Civil War the country had less than 31,000 miles of line, of which only about 2,000 were west of the Mississippi. It was not until February 22, 1863, that sod was turned for the first transcontinental line, on the Pacific end at Sacramento. Not until December 2 of the same year did work begin in the Mississippi Valley.

Six years later, after many delays and after 225 miles of overlapping line had been built, an agreement was reached whereby the two companies joined forces, and the golden spike which tied together the East and West was driven at Promontory, Utah (west of Corinne), on May 10, 1869.

Railroads Pushed Back Frontiers

The railroads, indeed, constitute the key that unlocked the treasure-house of American resources. The story of the nation's rise to greatness and power is an account of a succession of frontiers.

At the beginning, the frontier stopped at the Blue Ridge Mountains. The turnpike and the canal finally pierced these heights and let it move on to the Alleghenies. These long ridges held the pioneers in the eastern half of the Mississippi Valley almost a separate people from those on the Atlantic seaboard until the railroad builders' faith removed mountains—as far as the flow of commerce and travel was concerned.

In turn the Mississippi River became the frontier. What was the good of the land west of the Father of Waters if that stream remained unbridged?

Even as late as the early eighties our people thought that it was useless to build

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The new King Arthur's Hall in Tintagel village is a splendid structure built of Cornish stones of many colors. The outer corridor glows with 49 stained-glass windows, enriched with heraldry of the Knights of the Table Round.

Note: Other photographs of Tintagel will be found in "A Char-à-bancs in Cornwall," *National Geographic Magazine*, December, 1924; and "Channel Ports—and Some Others," July, 1915.

Bulletin No. 2, May 7, 1934.

Photo by Emil P. Albrecht

AN IRON-STUDDED DOOR GUARDS TINTAGEL'S SECRETS

In this stronghold, according to legend, King Arthur met with his Knights of the Table Round, and on stormy nights, when its ghostly hall is wrapped in swirling mists and sea spray, natives of the district say that Arthur and his men return to relate their adventures and good deeds.

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The King of Siam, An Eastern Monarch with Western Hobbies

THE return visit of the King of Siam to this country again directs attention to this progressive Eastern potentate, and to the steady march of his country toward Westernization.

Although Siam is one of the most exotic nations in the world it has gained the attention and the admiration of remote countries through many reforms and modern improvements initiated by its King.

Photography is a particular hobby with King Prajadhipok, who, besides directing affairs of State of nearly 12,000,000 people, finds time to operate several American-made, amateur motion-picture cameras with almost professional skill. Even the queen, Rambaibarni, as well as many other members of the royal family and persons in official circles, are enthusiastic photographers in both still and motion pictures.

Shares Ideas with his People

But King Prajadhipok does not keep all the fun to himself. For his subjects who cannot afford to practice photography he has erected a palatial cinema hall in Bangkok, the capital, which includes all the details of an up-to-date, Broadway motion-picture palace. The King said that he secured part of the inspiration for this magnificent $750,000 building during his visits to several American motion-picture companies, when he was in the United States three years ago.

This theater, one of the most modern in the Far East, is a welcome improvement to Bangkok residents who are interested in celluloid drama. All of the older cinema houses became hopelessly inadequate with the advent of sound pictures, because most of them were barnlike structures, built largely of corrugated iron and possessing very poor acoustics (qualities for distinct hearing).

Every year at its exhibition of paintings and photographs, the Siam Art Club, which enjoys the patronage of the King, usually has a number of entries in superb monochrome and color work produced by one of the King's half-brothers.

An amateur motion-picture club, of which the King is a member, was organized about four years ago. On several occasions the club members have been invited to the royal palace to witness the showing of "movies" made by Their Majesties.

Siam "Happy Hunting Ground" for Artists

Siam is one of the best fields in the world for persons with the hobby of making pictures. The architectural features and the wealth of color in Bangkok's several hundred temples present inexhaustible opportunities for the artist, whatever his medium of expression may be (see illustration, next page).

Here, certainly, the word "unique" has significance, for nowhere else in the world does one find such a variety of mosaics in pearl, tile, and bits of glass; multiple roofs with dragon heads terminating their corners; or such flower-bedecked prachedis (or votive spires), as in Siam.

The many canals teeming with boat traffic and venders of rare tropical fruits, the fields where the country grows rice that places her third among rice-exporting nations, and the northern hills in which the valuable teak trees are cut and then hauled by elephants to streams to be floated to Bangkok, are fascinating subjects for a camera lens. Siam's religious ceremonies, with hundreds of monks in yellow robes, and State processions are many and varied, revealing all the chromatic splendor of rich oriental pageantry.

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railroads through western Minnesota and the Dakotas, arguing that the region was a desert in summer and a wilderness of snow in winter. It took Custer's campaign against the Indians to persuade the nation that the Northern Pacific extension beyond the Mississippi River, at St. Paul, could be kept open more than five months a year.

Railroads During Civil War

During the Civil War the South had much less than a third of the nation's railways. These linked up distant communities rather than industrial centers. Few of them were strategic, whereas the North had rail connections admirably fitted for the movement of men and munitions.

In Europe the history of railway construction has been that of roads laid down to meet the demands of traffic already there. In this country tens of thousands of miles of line have been built through virgin territory, which it was hoped would grow up to their facilities.

Now railways link the ore of the Minnesota mines with the coal of the Pennsylvania mountains, the farms of the Mississippi Valley with the markets of the Atlantic Slope, the trucking and fruit-growing districts of Florida, Texas, and California with the consuming centers of the East and the North. Thus the geography of railway traffic in America has developed along lines that eliminate distance and make the whole United States one great community, tied together by bands of common interest as are the people of no other equal area in the world.

Note: See also "America's Amazing Railway Traffic," *National Geographic Magazine*, April, 1923; and "Hamburg Speaks with Steam Sirens," June, 1933.

For data about railroad competitors see: "The Automobile Industry," *National Geographic Magazine*, October, 1923; and "Flying," May, 1933. Progress in railway electrification is described in "New Jersey Now!" May, 1933.

Bulletin No. 3, May 7, 1934.

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THE IRON HORSE HAS BECOME AN ALUMINUM BULLET!

The Union Pacific's new streamline train arrives at the Union Station, Washington, where it was inspected by President Roosevelt and thousands of residents of the National Capital. Although the train operates as a unit, the joints between cars enable it to take curves and switches easily. The train has a vertical as well as a horizontal headlight. The vertical headlight, sending a shaft of light straight up into the air, serves as a warning at grade crossings where embankments or buildings cut off the beams of the ordinary headlight.

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Isle Royale, Michigan's "Farthest North"

ISLE ROYALE is a step nearer to becoming a National Park since Michigan citizens have launched a campaign to raise money to purchase sections of the big, rocky island in Lake Superior from private owners. Congress has already approved Isle Royale as a National Park if it can be turned over free of cost to the Federal Government.

This isolated island, which is closer to the Canadian mainland than to that of the United States, is Michigan's "farthest north"—a long finger of rocky and rugged terrain that lifts from the gray waters of Lake Superior in a series of towering ridges and long steep-walled valleys.

Narrow, fjordlike bays and channels indent its coast, winding back for miles like rivers between the timbered ridges. Bright lakes, flanked with dark forests of spruce and fir, lie cradled in the valleys. Jutting headlands and frowning cliffs guard the harbors, and countless small islets and reefs lie around it like sentinels around a rocky fortress.

Michigan's Early Source of Copper

This narrow finger of land is fifty miles long and a tenth as wide. Its shape has been likened to that of a giant schooner set forever on a northeast course (see map, next page). Here some of the first copper mines to be opened by white men in the Lake Superior region were put into operation about the middle of the last century.

Homes were built for the miners, villages established, and for a time man was near to breaking this wild island to his fashioning. But Isle Royale fought back at the intruders with isolation and cruel winters, and the lashing gales of Lake Superior.

Some thirty years later the mines were abandoned as no longer profitable. For the most part, the cabins and mine buildings have fallen or burned. The forest is gradually creeping over the rock dumps and the wilderness is reclaiming its own.

Long before white miners came, perhaps centuries before white men touched the shores of North America, aboriginal people were crossing Lake Superior to take copper from the rocks of Isle Royale. This island was the source of much of the copper used by primitive man in this part of the globe, and science has yet to unravel the secret of the race that hollowed out the first open pits where the red metal outcropped from the rock.

How Indians Mined Native Copper

Whoever they were, however, those ancient miners left indelible and dramatic record of their labors. They built fires on the ridges and cracked the heated rock with water. Then, with crude stone mallets brought from the distant mainland—there is no stone of that type on Isle Royale—they battered the broken rock away and took the nuggets of native copper, ready for fashioning into various objects.

At the bottom of those open pits the rude stone hammers are still lying, their battered ends bespeaking the use to which they were put by hands that have been dust these long centuries.

To-day Isle Royale is the home of a scattered handful of commercial fishermen. Their homes, built usually of logs, stand on the sheltered harbors, nestling at the foot of towering cliffs that give refuge from the battering gales of the lake.

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Recently one of the princes gave a striking private showing of thousands of feet of amateur, natural-color film that he had made of fantastic boats used in bearing the King and his followers on a visit to present gifts to the Buddhist temples; the State processions by palanquin; and the annual round of ancient ceremonies.

Not only had the pictures been taken by the prince, but the films were processed in his own laboratory in Bangkok.

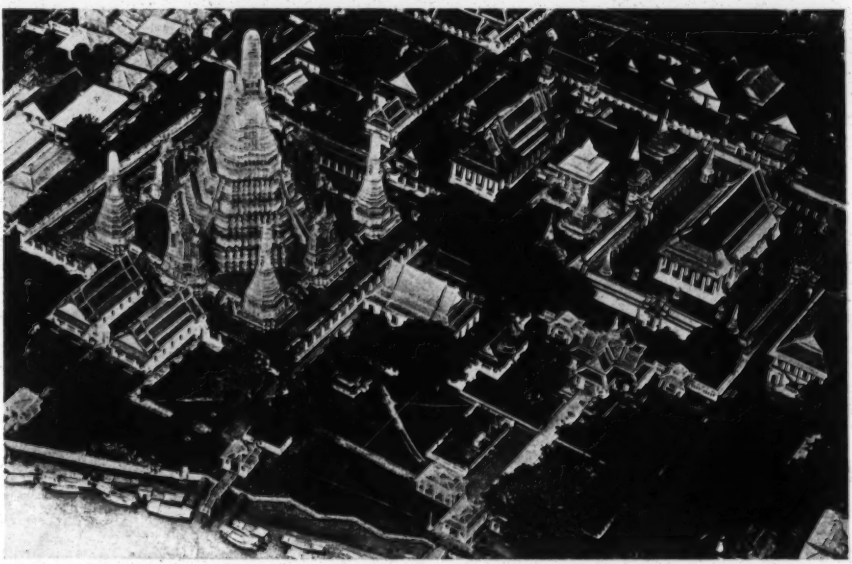
Note: For up-to-date pictures and information about Siam see "'Land of the Free' in Asia," *National Geographic Magazine*, May, 1934. See also "By Seaplane to Six Continents," September, 1928; "The Warfare of the Jungle Folk," February, 1928; "The Geography of Money," December, 1927; "Map-Changing Medicine," September, 1922; "Hunting the Chaulmoogra Tree," March, 1922; "From London to Australia by Aeroplane," March, 1921; and "Sightseeing in School," June, 1919.

Bulletin No. 4, May 7, 1934.

BINDERS FOR GEOGRAPHIC NEWS BULLETINS

A special binder for GEOGRAPHIC NEWS BULLETINS which will hold thirty issues (a complete year's edition) is now available. This holder consists of a handsomely embossed brown cover and spring jaws which grip hard and hold fast one, two or any number of BULLETINS up to a full year's allotment. When a single BULLETIN is required elsewhere, release is immediate, replacing equally easy while other BULLETINS remain undisturbed in numerical order as they were. BULLETINS are not punched or marred in binding.

This binder can be obtained by writing direct to The Albrecht Company, 211 South Sharp Street, Baltimore, Md., the National Geographic Society is informed. It is mailed postpaid upon receipt of $1. Money will be refunded if the binder does not prove satisfactory. Your name will be placed on the front cover in 22-carat gold for 15c additional.



Photograph from Comdr. Francesco de Pinedo

WHY SIAM IS AN ARTIST'S AND PHOTOGRAPHER'S PARADISE

The aërial camera gives a hint of the exotic splendor that greets the eye and lens at every hand in this "Land of the Free" in Asia. While Siam is adopting many Western inventions and ideas, its drawing, carving, music, dancing and other arts are still faithful to old Indo-Chinese conceptions. The cluster of spires marks the graceful Wat Chang, in Bangkok, the capital.

In the summer the fisherfolk get their mail from Duluth, nearly two hundred miles to the west and south, shipping their catch back by the boat that brings the mail. In addition to the homes of the fisherfolk, there are four summer hotels, built on the shores of Isle Royale.

Winter Isolation Is Complete

Early in the fall the hotels close for the year. A little later some of the fisherfolk lift the last of their nets from the water, hang them in the fish houses to dry, and make ready to leave for the mainland. As the autumn gales roar down over Lake Superior and the harbors begin to skim with ice, they depart, either in their own tugs or aboard a Duluth boat, leaving an almost unpeopled island to the brooding silence, interrupted only by the screaming storms of winter.

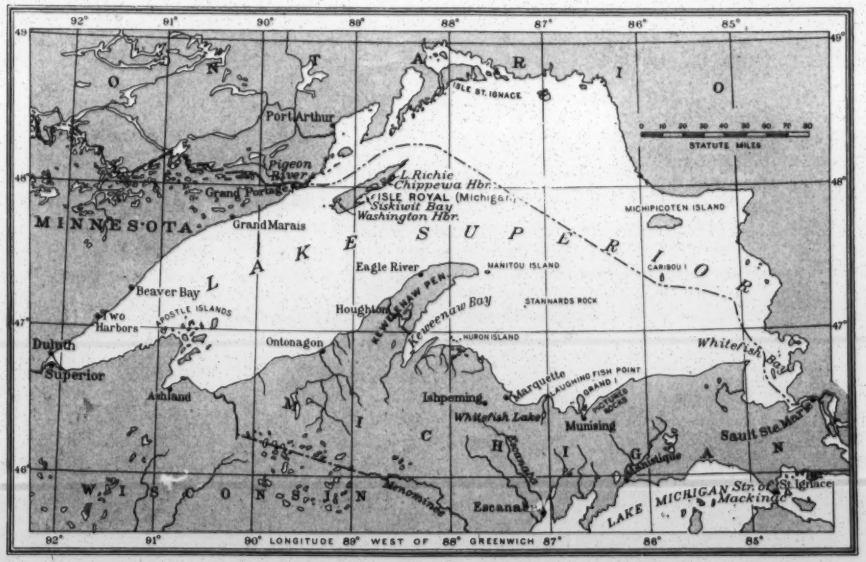
The isolation of the families that remain on the island during the winter is complete and unbreakable, although an airplane could land in an emergency. Not once in a decade are the restless waters of Lake Superior likely to freeze solidly enough to permit crossing from the Canadian shore by dog team; and, of course, once winter has come and the harbors are sealed, the lake filled with drifting ice packs that pile in grinding fields off the rocky shores, it is out of the question to reach Isle Royal or leave it by boat until May.

The island was named for King Louis XIV by early French trappers and adventurers.

Note: Interesting additional reading and photographs of Lake Superior wild life will be found in "Winter Sky Roads to Isle Royal," *National Geographic Magazine*, December, 1931.

See also "Around Our Inland Seas," *National Geographic Magazine*, April, 1934; "Mickey the Beaver," December, 1928; "Michigan, Mistress of the Lakes," March, 1928; "Wild Life of Lake Superior," August, 1921; and "The Origin of American State Names," August, 1920.

Bulletin No. 5, May 7, 1934.



Drawn by A. H. Bumstead

ISLE ROYALE IS BUT 20 MILES FROM THE CANADIAN SHORE

When the boundary treaty was drafted with Great Britain, the American delegation insisted that the line be bent northward so that Isle Royale would be included in American territory. Stories of French traders who had brought back samples of copper from the island made this remote outpost seem desirable. To-day Isle Royale's copper is not important, but as the largest area of unspoiled wilderness in the Middle West it offers an unusual National Park area within two days' travelling time of some 49,000,000 people.

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